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CLAIMS

1. A pixelated detector for providing an image signal representing an object, the detector comprising an array of sensing pixels for generating image data from different respective areas of the object, the image data
5 together providing the image signal, wherein the outlines of at least two pixels in the array are different.
2. A pixelated detector according to Claim 1 wherein the outlines of at least two of the pixels enclose different areas.
3. A pixelated detector according to either one of the preceding claims
10 wherein the outlines of at least two of the pixels are non-circular and show rotation with respect to one another in the detector.
4. A pixelated detector according to any one of the preceding claims wherein the outlines of at least two of the pixels have different shapes.
5. A pixelated detector according to any one of the preceding claims
15 wherein at least one of the pixels has an irregular outline.
6. A pixelated detector according to Claim 5 wherein the irregular outline is jittered.
7. A pixelated detector according to any one of the preceding claims wherein the outline of at least one of the pixels shows no symmetry.
8. A pixelated detector according to any one of the preceding claims
20 wherein the pixels of the detector do not fill a tessellation grid.
9. A pixelated detector according to Claim 8 wherein the outlines of at least three pixels of the detector are irregularly spaced from one another.
10. A pixelated detector according to any one of the preceding claims, further
25 comprising motion control apparatus for producing controlled motion of the detector relative to an object in use.
11. A pixelated detector according to any one of the preceding claims wherein the array of sensing pixels comprises a distribution of pixels over

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the array which, in at least one direction across the array, have outlines with different dimensions in said at least one direction.

12. A pixelated detector according to any one of the preceding claims wherein the array of sensing pixels comprises a distribution of pixels over
5 the array which, in at least two different directions across the array, have outlines with different dimensions in each of said at least two directions.
13. A pixelated detector according to any one of the preceding claims wherein the outlines of at least some of the pixels in the array are generally based on a parallel-sided outline.
- 10 14. A pixelated detector according to any one of the preceding claims wherein said array of pixels comprises a herringbone pattern of rectangular pixels, provided by two sub-arrays of pixels, the long dimensions of the pixels of one sub-array being parallel to one another and slanted with respect to the long dimensions of the pixels of the other
15 sub-array.
15. A pixelated detector according to any one of the preceding claims wherein the array of pixels has more than one associated tessellation grid.
16. A pixelated detector according to any one of the preceding claims
20 wherein the image data are independent of, or in addition to, colour.
17. A pixelated detector according to any one of the preceding claims, wherein the detector is provided with a signal processor for processing image signals generated by the detector, wherein the processor is adapted to process a first image signal generated by the detector and a
25 second image signal generated by the detector to generate a third image signal having improved resolution.
18. A method of obtaining an image of an object using a pixelated detector, the method comprising the steps of:
- 30 i) obtaining a first series of output signals from respective pixels of the detector representing a first image of the object;

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- ii) obtaining a second series of output signals from respective pixels of the detector; and
 - iii) processing the first and second series of output signals to produce a digital representation of the object,
- 5 wherein at least one output signal from each of the first and second series, relating to the same position on the object, is obtained from a different respective pixel, said different respective pixels having different outlines with respect to one another.